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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,861	11/26/2003	John M. Sabol	144175XZ/YOD GEMS.0261	9690
7590 Patrick S. Yoder FLETCHER YODER P.O. Box 692289 Houston, TX 77269-2289			EXAMINER TABATABAI, ABOLFAZL	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 04/14/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/723,861

**Applicant(s)**

SABOL ET AL.

**Examiner**

ABOLFAZL TABATABAI

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17, 31, 34-36, 38 and 39 is/are pending in the application.
- 4a) Of the above claim(s) 18-27, 32, 33, 37 and 38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 31, 34-36, 38 and 39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Final Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **Response to Amendment/Arguments**

1. Applicant's arguments, (pages 9-16), filed on January 9, 2008 with respect to the rejection of claims 1-7, 28-31,34-36 and 39 under Taguchi et al (U. S. 5,807,256) in view of Carrott et al (U. S. 6,909,792 B1) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view Kano et al (U. S. 5,359,513); Roehrig et al (U. S. 7,054,473 B1) and Nishikawa et al (U. S. 5,598,481).

### **Claim Rejections - 35 USC § 102**

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 9, 14-16, 28-31,34-36 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Kano et al (U. S. 5,359,513).

Regarding claim 1, Kano discloses a method for analyzing image data comprising:

generating a temporal change image based upon first and second images from different times by segmenting the first and second images and registering at least a portion of the segmented images with one another (please note, to abstract; column 5, lines 1-22 and column 14, lines 3-14).

analyzing the temporal change image (please note, to abstract and column 5, lines 1-22) via at least one CAD algorithm (please note, to column 14, lines 3-14).

Regarding claim 2, Kano discloses the method of claim 1, wherein analyzing the temporal change image via the CAD algorithm includes diagnosing a physical condition of a patient (please note, to column 2, lines 3-7).

Regarding claim 3, Taguchi discloses the method of claim 1, wherein the CAD algorithm identifies at least one feature of interest in the temporal change image (please note, to column 14, lines 29-43).

Regarding claim 4, Taguchi discloses the method of claim 1, comprising performing quantitative analysis on the temporal change image (please note, to column 14, lines 3-6).

Regarding claim 5, Taguchi discloses the method of claim 4, wherein the quantitative analysis includes determining a change in size of a feature of interest between the first and second images based upon the temporal change image (please note, to column 14, lines 29-43).

Regarding claim 9, Kano discloses a method for analyzing image data comprising:

analyzing a first image via at least one CAD algorithm to identify a feature of interest image (please note, to abstract and column 14, lines 3-14); and, if a feature of interest is identified in the first image, accessing a second image from a different time than the first image and generating a temporal change image based upon the first and second images (please note, to abstract; column 6, lines 45-68 and column 7, lines 1-6).

Regarding claim 14, Kano discloses the method of claim 9, wherein the temporal change image is generated by segmenting the first and second images and registering the segmented images with one another (please note, to column 5, lines 1-12 and 59-64).

Claim 15 is similarly analyzed as claim 4 above.

Claim 16 is similarly analyzed as claim 5 above.

Claim 17 is similarly analyzed as claim 6 above.

Claims 28, 31, 34, 36 and 39 are similarly analyzed as claim 9 above.

Claims 30 and 35 are similarly analyzed as claim 1 above.

Regarding claim 29, Kano discloses the method of claim 28, wherein analyzing the first and second images includes quantifying a change in a feature of interest between the first image and the second image (please note, to column 14, lines 3-6).

### **Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 6-8, 10-12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano et al (U. S. 5,359,513) in view of Roehrig et al (U. S. 7,054,473 B1).

Regarding claim 6, Kano is silent about the specific details regarding the method of claim 1, comprising presenting a report to a user along with at least one of the first image, the second image and the temporal change image.

In the same field (medical imaging) endeavor, however, Roehrig discloses method and apparatus for an improved computer aided diagnosis system comprises presenting a report to a user along with at least one of the first image, the second image and the temporal change image (please note, to column 14, lines 54-62).

Regarding claim 7, Kano is silent about the specific details regarding the method of claim 1, wherein the first and second images are generated by different imaging modalities.

In the same field (medical imaging) endeavor, however, Roehrig discloses method and apparatus for an improved computer aided diagnosis system comprises the first and second images are generated by different imaging modalities (please note, to column 14, lines 23-33).

Regarding claim 8, Regarding claim 7, Kano is silent about the specific details regarding the method of claim 1, comprising analyzing at least the first image via a second CAD algorithm.

In the same field (medical imaging) endeavor, however, Roehrig discloses method and apparatus for an improved computer aided diagnosis system comprises analyzing at least the first image via a second CAD algorithm (please note, to column 11, lines 18-23).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use reporting a result to user, imaging modalities analyzing the first image via a second CAD algorithm as taught Roehrig in the system of Kano because Roehrig provides Kano an improved CAD system, serving as an electronic reminder or second reader, or higher sensitivity for abnormalities. Additionally, such CAD systems can assist radiologists in reducing the misdiagnosis rate, or lowering the false negative rate (please note to column 1, lines 29-35).

Claim 10 is similarly analyzed as claim 6 above.

Claim 11 is similarly analyzed as claim 8 above.

Claim 12 is similarly analyzed as claim 9 above.

4. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kano et al (U. S. 5,359,513) and Roehrig et al (U. S. 7,054,473 B1) as applied to claim 9 above and further in view of Nishikawa et al (U. S. 5,598,481).

Regarding claim 13, Kano is silent about the specific details regarding the method of claim 12, wherein the CAD algorithm used for analyzing the first image has a

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sensitivity and a specificity to produce a desired level of positive identifications of potential features of interest, and wherein the CAD algorithm used for analyzing the temporal change image is configured to reduce the positive identifications of features of interest.

In the same field (medical imaging) endeavor, however, Nishikawa discloses computer-aided method for image feature analysis and diagnosis in mammography comprises the CAD algorithm used for analyzing the first image has a sensitivity and a specificity to produce a desired level of positive identifications of potential features of interest, and wherein the CAD algorithm used for analyzing the temporal change image is configured to reduce the positive identifications of features of interest

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use reporting a result to user, imaging modalities analyzing the first image via a second CAD algorithm as taught by Nishikawa in the system of Kano because Nishkawa provides Kano a new and improved method of computer-aided detection of clustered microcalcification on mammograms whereby the accuracy of diagnosis can be improved by reducing the number of false-positive detections without decreasing the sensitivity for detecting true-positive microcalcification (please note, to column 3, lines 56-64).

### **Contact Information**

5. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to ABOLFAZL TABATABAI whose telephone number is (571) 272-7458.



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The Examiner can normally be reached on Monday through Friday from 9:30 a.m. to 7:30 p.m. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Bhavesh Mehta, can be reached at (571) 272-7453. The fax phone number for organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Abolfazl Tabatabai/

Primary Examiner, Art Unit 2624

April 10, 2008

